



BLADE RUNNER™

The Atmosphere

MOST sci-fi films depict the future as pristine, austere and colourless, with shiny buildings, under-populated streets and silver suits with diagonal zippers.

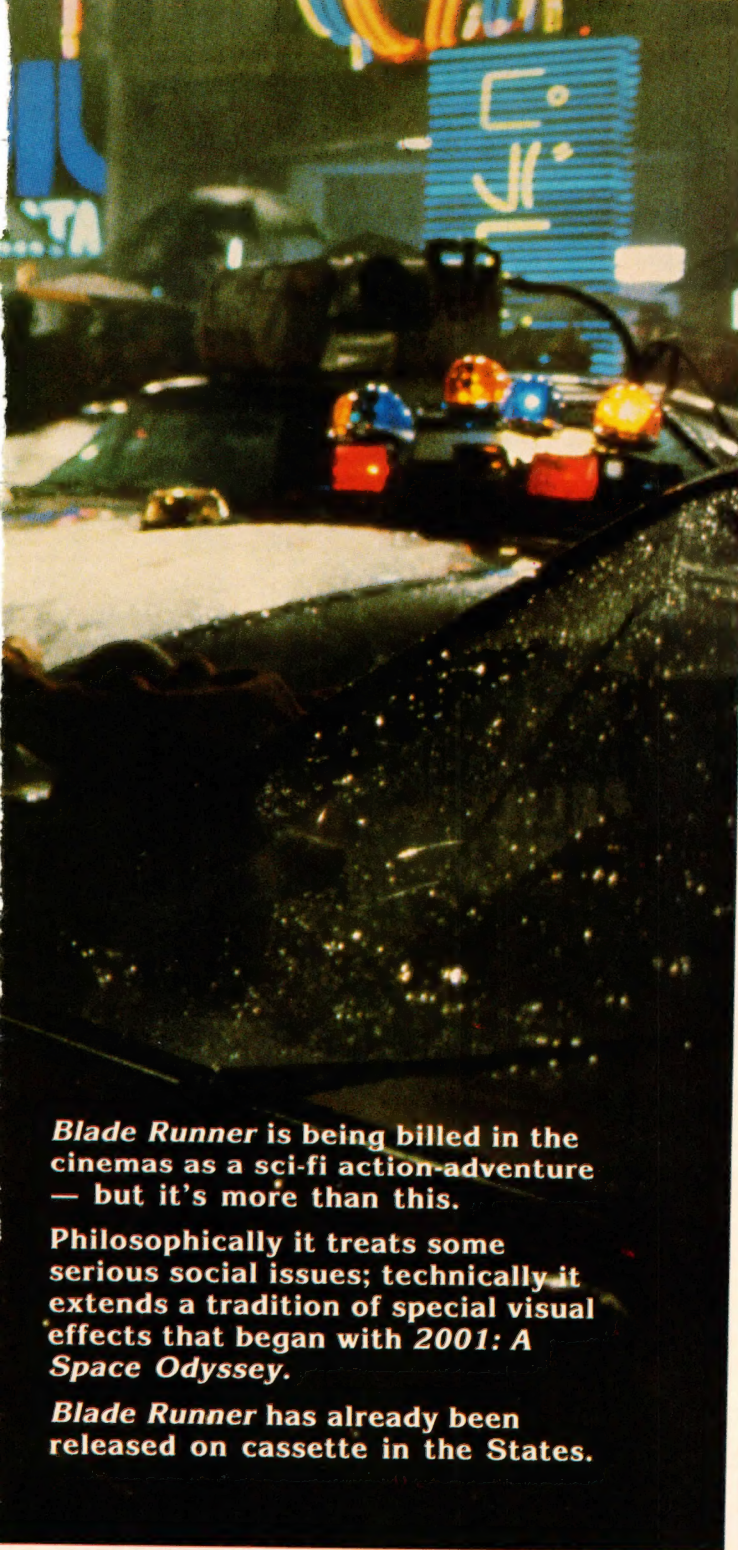
Blade Runner is set in Los Angeles 40 years in the future, and the producers have taken a pessimistic view. Here is a world of

smog, pollution, incessant rain, dirty streets, crumbling houses, slum-dwellers and derelicts. It has all the charm of a monsoon-doused Calcutta in the midst of a street-cleaners' strike.

Not all the scenes are grubby. Obviously in this future world the rich still get richer and the poor get slums. At one end of the city, stands a 700 storey pyramidal office block, the home of the Tyrell Corporation, a multi-galaxy cartel in the genetic engineering industry.

Down at street level where our hero and the "real people" live, it is a different story. All the old city buildings remain, "retro-fitted" with pipes, transformers, and whatever other gear is needed to keep them going.

"Our city is rich, colourful, noisy, gritty, full of textures and teeming with life," says director Ridley Scott, who was also responsible for that remarkable film **Aliens** a few years ago. "This city is much like any major city of today. This is a tangible



Blade Runner is being billed in the cinemas as a sci-fi action-adventure — but it's more than this.

Philosophically it treats some serious social issues; technically it extends a tradition of special visual effects that began with 2001: A Space Odyssey.

Blade Runner has already been released on cassette in the States.

future only 40 years away, so we couldn't make it too exotic to be believed."

The centrepiece of the film's design is a street-complex known at the old Warner Bros Burbank Studios as the "New York Street". It was a large set built in 1929 to provide the dark alleys and back streets stalked by Humphrey Bogart and James Cagney ... a Philip Marlowe-Sam Spade environment.

If you're over 40, you'll probably recognise many of the old facades.

by Stewart Fist

The Story

This futuristic thriller centres on Rick Deckard, an ex-police detective who is bought out of early retirement for an urgent assignment. He must track down four desperate killers who, for some mysterious reason, have returned to Earth from a space colony and are trying to infiltrate a major industrial organisation — the Tyrell Corporation.

The case is further complicated when Rachael, a beautiful young woman (and an enigmatic suspect) becomes his ally — and they fall in love.

Deckard uses futuristic tools of the sleuthing trade, and possesses professional skills unheard of by Sam Spade or Phillip Marlowe. He scans for clues using a super-computer, gets around in a flying "Spinner" car, wields unusual weapons, and administers complex technological tests to suspects.

On the grotty streets of a future megalopolis, Deckard pursues the renegades. But this is not a man-hunt. These fugitives are manufactured humanoids called "replicants", created at the Tyrell Corporation by genetic cloning. They are almost identical in every way to humans.

It is this aspect that gives the story its twist. Here we have a futuristic slave parable. At one level *Blade Runner* is a remake of "Uncle Tom's Cabin", or "Guess Who's Coming to Dinner" with a robot playing Sidney Poitier.

The film makes us ask ourselves: Where do we draw the line? What do we mean by slavery and racial discrimination when genetic cloning produces "replicants" who/which are almost human?

These fugitives are extremely fast and powerful combat models, the supreme products of the Tyrell Corporation, made for space colonisation. Against all regulations the four have returned to Earth, killing a human shuttle pilot in the process. They have already killed and Deckard must stop them before they kill again.

The renegades (two male, two female) have disappeared into the city's slums. Their leader infiltrates the Tyrell Corporation to confront his creator and find a way to extend his and the other replicants' lives.

Here the producers have another emotional twist for the audience. These "almost humans" have a very human desire to live a few more years. The Tyrell Corporation built-in an automatic life-span limit of only four years — so replicants have no past, and little future.

Our hero diligently sets about the task of exterminating the replicants. He pursues one through the crowded streets of the city and, in a rather gruesome scene, finally dispatches her with his blaster. The heroine of the film, Rachael, saves Deckard's life by killing another renegade. Rachael is, of course, a replicant herself and so also under sentence of death.

The simplicity of goodies-v-baddies dissolves at this point. Deckard (Harrison Ford) is no longer Han Solo of *Star Wars* fighting against the black-clad evil of Darth Vader. To a degree he has assumed the mantle of Vader himself. There is no longer a clear-cut right and wrong.

The climatic confrontation between Deckard and the replicant leader, is a terrifying chase through decaying buildings and across rooftops and ledges hundreds of stories above the teeming city, in true Hollywood style. It culminates in a savage fight with a surprising finish. The replicant leader saves Deckard's life and sacrifices his own.

For *Blade Runner*, the production designer Lawrence Paull and art director David Snyder revamped the historical set into a unique futuristic thoroughfare — one of the largest studio sets used in recent years. It comprises elements of New York, Hong Kong, Tokyo's Ginza section, Milan's business district, and London's Piccadilly Circus.

Sid Mead, a famous industrial designer who was the "visual futurist" on the film developed the

concept of the city with director Ridley Scott — originally an artist and set designer himself.

"First of all you have this incredible congestion at street level," Mead explains. "The streets have become like Paris sewers as cities are built higher and higher. If you are forced to live at street level by accident of whatever, it's a very unpleasant place to be . . . there's this Hong Kong/Calcutta kind of population density that Ridley was after."



(Left) The 'Hades' industrial landscape as it appeared in the film, and (Right) during filming in the smoke room.

Models and Miniatures

AT the other end of town — and the other end of the scale — stands the 700 storey Tyrell Corporation pyramid . . . all of six feet high.

The Tyrell pyramid, and other special visual effects in *Blade Runner* are by Douglas Trumbull, a superb sci-fi film director in his own right, who now specialises in models and miniatures.

Trumbull received Academy-Award nominations for his work on **Close Encounters of the Third Kind** and **Star Trek, The Motion Picture**. In his early 20s he was one of the major contributors to the special visual effects of **2001** and later, **The Andromeda Strain**.

As a director, Trumbull is probably best known for his own low budget sci-fi classic **Silent Running** which he shot almost exclusively in a moth-balled US Navy aircraft carrier to save money.

In *Blade Runner* there is extensive use of miniatures (or "models" as they are more properly called by those who work with them). A crew of

over 50 people were involved in the miniature work, matte painting (special background-scene painting), and optical effects photography.

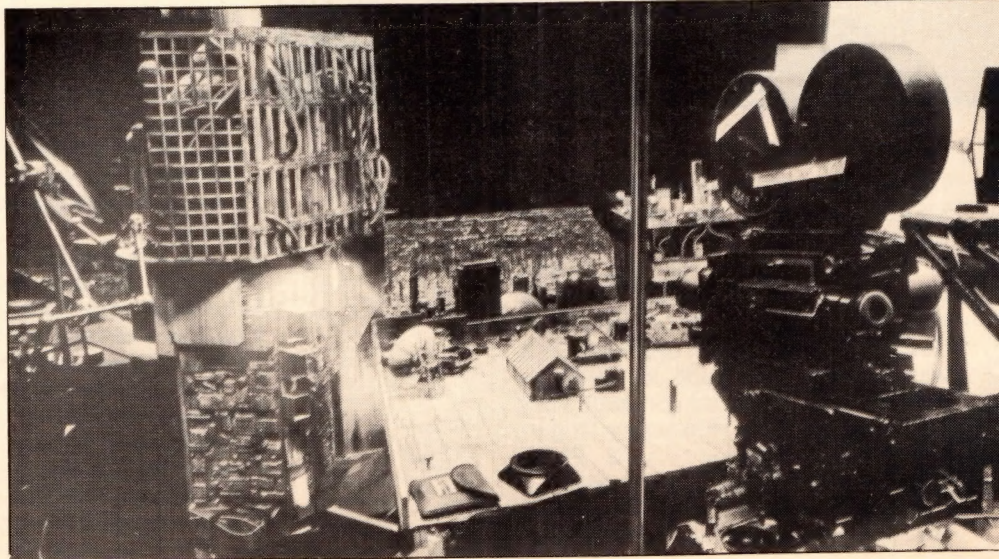
The miniature photography extended over a period of 10 months, running concurrently with the live action photography. Over 90 special effect shots were made on 65mm film for the *Blade Runner*, although not all of them ended up in the picture.

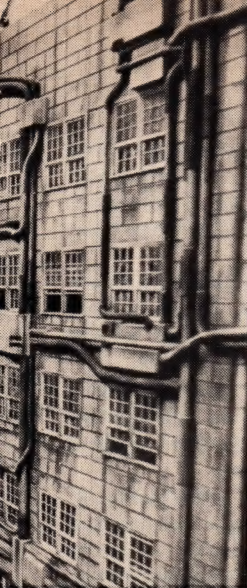
Well before the miniature

photography commenced, the designers and model makers had been working. They figured out what scales to use, and began making the Tyrell pyramid and the awesome industrial "Hades" landscapes — the opening shot in the film. On the wide screen it's as breathtaking as the battle-cruiser opener for **Star Wars**.

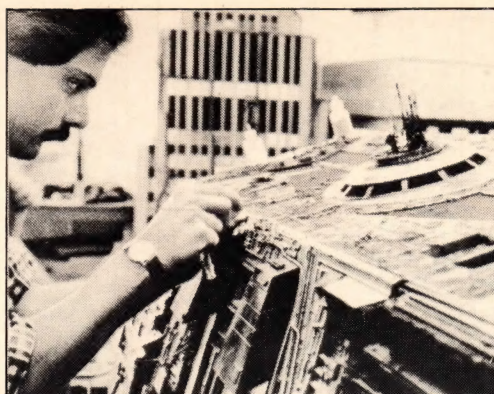
Trumbull's miniature photography is noted for its attention to detail. He found that a common mistake with model photography is to film in clear air. Without smoke and atmospheric haze you don't get that aerial perspective which is an important clue to distance.

When we look out over any distant scene, no matter how clear the air,

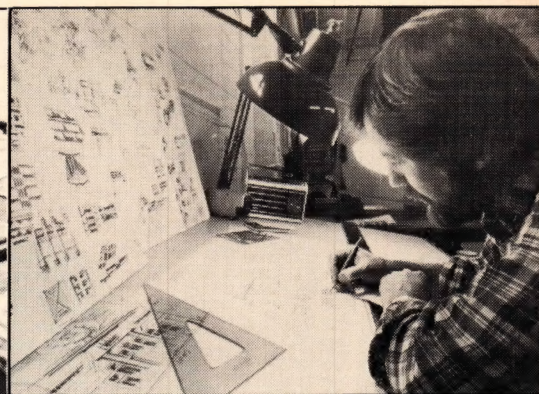




(Left) This large scale was needed in the models, to provide the detail necessary for wide-screen photography.



Applying finishing touches to the model of the Tyrell pyramid.



Designer Tom Cranham completing details of the pyramid face.



colours fall off into a bluish monochrome and there is a blending and softening of resolution the further you get away. Smoke in the filming room is one solution, but it must be tightly controlled and carefully matched between scenes and with various lighting set-ups.

Because miniatures are three-dimensional, they are more versatile than background matte paintings. The lighting on models can be varied, and they can be filmed from a variety of camera angles, allowing the camera to move in a natural way.

David Stewart, the director of model photography on *Blade Runner* ran tests on the miniatures as they became available. Every aspect had to be tested.

The model vehicles came in different sizes, and each had to be shot and reshot under different lighting conditions; fibre optics were used to give realistic lighting to the model windows; explosions were filmed out in the parking lot or in a nearby desert area, and merged with the model-shots.

(Left) Model photography of the roof-top, scene of the final chase.

Director Ridley Scott worked closely with David Stewart on the model photography. The lighting techniques being used on the live-action photography must be duplicated when shooting the models.

Wet streets and buildings reflect lights in a certain way, and a complexity of direct- and glancing-light must be accurately matched to allow the editor smooth transitions from live action to miniatures.

Although the models are sometimes used alone on the screen, they more often appear as elements in composite scenes with matte painting and live action.

George Lucas's *Star Wars* represented a quantum leap in model photography because of the sophisticated techniques involved. In its way *Star Wars* was as innovative as Kramer's 2001 many years earlier. They are both Trumbull films.

In order to meet the challenges of the *Star Wars* script, Trumbull's special effects group designed a super-sophisticated, totally computerised motion control system for the camera. This was called officially the "Dykstraflex" after its

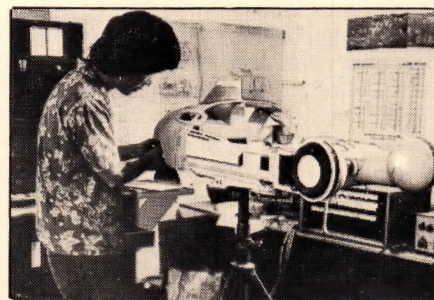
design supervisor, John Dykstra, but more affectionately it was known as the "Ice Box" or the "Sausage Machine".

This electronic marvel is capable of moving a camera around a miniature with the most complex set of gyrations. Each part of the motion is analysed and stored in the computer memory so that an action can be repeated *exactly*, as many times as required. It can pan, tilt, track, and follow focus with the camera, and feed synchronised signals to control motors on the models.

Since the whole system is computerised, the film can be backed up and re-exposed at will — exactly duplicating complex moves made in the first pass, but with new picture elements added.

For some *Blade Runner* shots the film stayed in the camera for three days while multiple re-exposures of a scene were done to create a certain exotic effect. On one occasion a momentary glitch in the power supply dumped the computer program, and with it three days of intensive work.

Both *Star Wars* and *The Empire Strikes Back* included many miniature shots which were photographed separately and then blended into live action through the ingenuity of the optical printer. This is where large-format film techniques still have an enormous advantage



Model builder, Tom Pahk works on one model of the 'Spinner'.



over electronic photography.

Models used in miniature photography are designed to a definite scale. The choice of scale is the subject of long and complex calculations, with decisions by the special-effects experts and the model cinematographer.

Theoretically, the smaller the model, the cheaper it is to build, but there are many technical reasons for building models as large as

practicable — within the budget constraints, naturally.

The crystal clarity of a Vagon Space-station, or of an Empire Battle-cruiser passing overhead, can only come from fanatical attention to detail using large-scale models.

Even more important, is the critical problem of depth-of-field. Nothing reveals more to an audience the fact that a model is being used, than the image's fall-off in focus over

distance.

If you have ever used a single lens reflex or video camera, you will know that large objects at a distance remain in focus no matter what their length.

Conversely, a flower seen in close-up has such a narrow depth-of-field that the petals on each side of the focal-point will often be a blur.

This is the model photographer's dilemma. He is dealing with close-ups, but he needs the depth-of-field associated with distance.

To simulate this "infinite-focus" feel he uses wide angle lenses and extremely small apertures — which in turn give him exposure problems. He must therefore use the brightest possible illumination and the slowest camera speeds (to increase exposure time) — but slow camera speeds will also give him problems.

The best solution is to use the largest possible model and back his camera away thereby increasing the depth-of-field. This is why model makers are reluctant to call their creations "miniatures": the model for the 138-storey Glass Tower in **The Towering Inferno**, for instance, was 110 feet tall and the oil tanker used in **The Spy Who Loved Me** was 63 feet long and had a crew of three.

Quite often, especially in the case
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The Mood and Lighting

From the filmmaker's point of view, *Blade Runner* stands out for its live action cinematography almost as much as for its model work.

Although the story is set 40 years in the future, the mood and the "look" of the film are from 40 years in the past. This is a 1940 film shot in the '80s, about the year 2021. It has one foot as firmly planted in the past as the other is in the future.

A film like *Blade Runner* only results when the director, cinematographer, set- and costume designers all have a common image of the film. This film was Ridley Scott's concept, carried through by the director of live-action photography, Jordan Cronenweth.

Like every other aspect of the film, the photography takes the classic conventions of the Sam Spade/Philip Marlowe detective genre even further than they did in the '40s. The cinematographer had the advantage of looking back on a style, from the vantage point of time.

"We used high contrast, backlight, smoke, rain and lightning to give the film its personality and moods," explains Cronenweth. "We had street scenes just packed with people — like ants. So we made them look like ants — all the same. Ridley felt the style of photography in *Citizen Kane* most closely approached the look he wanted, so we included unusual camera angles and neon lights — which were used as primary sources of light whenever possible."

The street scenes are lit almost completely by neon signs; dozens of them in every outside shot. In the pools of water from the constant rain, neon reflections highlight objects and people with their multi-coloured flickering hues.

Cronenweth's photography on the *Blade Runner* is notable also for its use of backlight. Faces are usually partly in the shade, and hair is rimmed with strong lighting from behind.

"I can never use enough backlighting," he says. "*Blade Runner* is a film that calls for extremes. It's naturally a wonderful vehicle for this kind of theatrical lighting. You accept it. It's very real . . . it transcends theatricality."

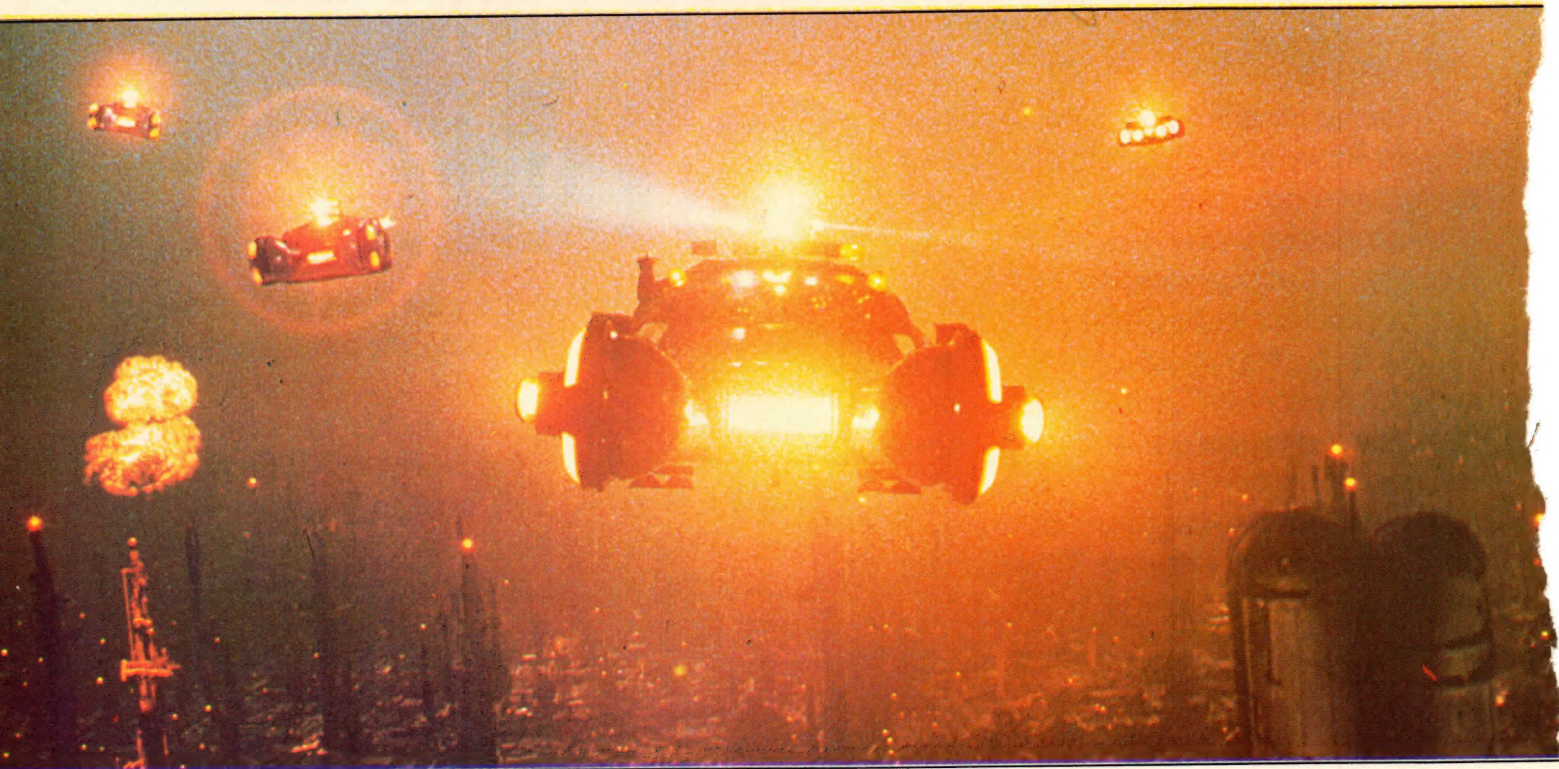
The '40s clichés extend to venetian blinds, neon lights, and suits with padded shoulders; all key elements of the classic black and white detective thrillers. If you watch the film closely you will see how often Cronenweth uses shafts of light across the screen — created by strong cross- or back-lighting through smoke, haze and rain.

Most of the live action footage is shot in rain — or it appears that way to the audience, although much of the rain was added later by the optical effects camera.

Another key element in establishing the mood of the film is the constant play of searchlights. These become a major cinematic theme. They probe dark alleys, and wander through the background of many scenes — without ever being explained to the audience.

To rationalise the spotlights the director invented futuristic patrolling airships. These gigantic black Goodyear-like blimps float through the night sky above the slums. Presumably they are both advertising displays and police control centres. Their searchlights, a governing surveillance that invade the privacy of every home.

It is these photographic elements, more than the storyline, that give *Blade Runner* a dominant atmosphere of threat. The watchers in the airships are silent monitors of this society: guardians — or prison guards . . . or is there any difference?



of vehicles, a number of different scale models will be made to accommodate a variety of shooting problems. The "Spinner", an aerocar seen constantly throughout *Blade Runner*, was built in four different model sizes together with one full size vehicle mock-up. The models ranged from two-and-a-half centimetres to nearly two metres in length.

There are enough problems in producing believable stationary models, but when the script calls for action, a whole new set of obstacles must be overcome.

Effects requiring explosions, water and fire, contain natural elements that are impossible to reduce to a small scale. With water, for instance, a drop always remains drop-sized: you can't scale-down water splashes. For this reason it has been found by trial and error that a 1:16 scale miniature is the minimum practical for filming with water.

Fire and explosions present similar dimension problems. In most cases a realistic appearance is only achieved by filming the action with cameras running at very high speeds.

A small explosion happens so fast that you hardly see it, whereas the flash and flame of a large explosion, seen from a distance, lasts several seconds. So the filmmakers need to film their miniature explosions with very high-speed cameras. On replay



(Top) A Spinner passes between the twin pyramids.

(Above) Rachael (Sean Young) in a cloud of back-lit smoke.

the explosions will be delayed on the screen long enough to appear realistic.

Using camera speeds of up to 15 times the normal, again compounds the cameraman's problems. He has already been forced into using wide-angle lenses at a minimum aperture for his depth-of-field — now he has to run his camera at a high-speed, cutting back the exposure time per frame even more.

It is only the recent developments of high-speed colour film, and computerised-repeatable camera mounts that have enabled many modern films to be made. The techniques and technology they needed weren't around 20 years ago.

And where will it go from here? With general film production costs skyrocketing and a constant cry for more spectacular images coming from young audiences, the need for model work will probably increase.

The new techniques of model building and the means of photographing them are actually reducing the cost of this type of production. It hasn't reached the stage yet where films like *Blade Runner* are within the range of Australian film budgets, but it may be soon. Who knows, within the next few years we may see an Australian *Star Wars*. You never can tell with film. ■